“It’s changed my life!” Evaluation and improvement of a pilot Tier 2 weight management course,

‘Balance’.

Abstract

Purpose: This paper describes a service evaluation study of ‘Balance’ - a National Health Service Tier 2 pilot weight management course delivered in a primary care mental health service. The 12 weekly sessions included dietetic, psychological and behavioural elements underpinned by cognitive behavioural theory and ‘third-wave’ approaches including acceptance and commitment therapy, compassion focused therapy and mindfulness.

Design/Method/Approach. A mixed-methods design was used in this service evaluation study that included analysis of outcome measures (weight, eating choices, weight-related self-efficacy and mental health) and focus group data (*n* = 6) analysed using thematic analysis. Eleven clients with a BMI of 25 – 40 kg/m2 enrolled and nine clients completed the course. Outcome data were collected weekly with follow-up at 3 and 6 months.

Findings. Quantitative data analysis using non-parametric Wilcoxon signed-rank tests showed that the group mean weight decreased significantly (p = 0.030) by the end of Balance but the group mean weight loss was not statistically significant at the 3-month (p = 0.345) or 6-month (p = .086) follow-up. The qualitative results showed that participants valued the course ethos of choice and also welcomed learning new tools and techniques. Balance was very well-received by participants who reported benefitting from improved wellbeing, group support and developing new weight management skills.

Research limitations and implications. Only one client attended all sessions of the group and it is possible that missed sessions impacted effectiveness. Some of the weight change data collected at the 6-month follow-up was self-reported (*n* = 4) which could reduce data reliability. Focus group participants were aware that Balance was a pilot with a risk that the group would not be continued. As the group wanted the pilot to be extended, the feedback may have been positively skewed. A small sample size limits interpretation of the results.

A group weight management intervention including dietetic, psychological and behavioural elements underpinned by cognitive behavioural theory was well-received by service users and effective for some. Commissioners and service users may have different definitions of successful outcomes in weight management interventions.

Practical limitations. Longer term support and follow-up after Tier 2 weight management inteventions may benefit service users and improve outcomes.

Originality. The paper contributes to a small but growing evidence base concerned with the design and delivery of weight management interventions. Areas of particular interest include: a gap analysis between the course content and National Institute for Health and Care Excellence (NICE) clinical guidelines; participants’ views on the most impactful course features; and recommendations for course development. The results also show a disconnect between evidence-based guidelines (mandatory weight monitoring), participants’ preferences and clinicians' experience. The difference between client and commissioner priorities is also discussed.

Background

Obesity, defined as having a body mass index (BMI) above 30kg/m2, is a complex problem affected by a range of factors including behaviour, genetics, environment and culture (Public Health England, 2017). 67% of men and 60% of women in England are overweight or obese, and prevalence rates are suggested to vary by sex, age and socio-economic status (NHS Digital, 2018). Obesity is associated with increased health risks and health costs, with weight-related NHS costs predicted to reach £9.7 billion by 2050 (Public Health England, 2017). This public health issue received increased media attention in 2020 following the publication of the UK Government's Obesity Strategy and the identfication of overweight as a risk factor for serious illness and death from COVID-19 (Department of Health and Social Care, 2020).

Weight management services

In the UK, National Health Service (NHS) weight management services are typically split into four tiers based on body mass index (BMI). Access to weight management services is inconsistent nationally (Public Health England, 2015). As an indication, a national survey of service commissioners (N = 330) found that 20.6% of responders (*n* = 68) reported that there were no Tier 2 or Tier 3 weight management services for children, young people or adults in their area (Public Health England, 2015), indicating a gap in service provision.

Weight management programme components

Clinical guidelines published by the National Institute for Health and Care Excellence (NICE) recommend that weight management programmes are multi-component which is defined as addressing behaviour change, physical activity and diet (NICE, 2014). A synthesis review of the efficacy of longer-term, multi-component weight management interventions found that programmes with three components (e.g. diet, physical activity and behaviour change) were more effective than those with one or two components (Kirk, Penney, McHugh, & Sharma, 2012). Public Health England (PHE) report that 66% of Tier 2 services are described as multi-component and in line with NICE guidance (Public Health England, 2015).

Methods and techniques

Behavioural-based weight loss approaches aim to replace unhealthy behaviours by reinforcing healhier ones (Lillis & Kendra, 2014). Guidance on evidence-based behavioural change techniques to be used in Tier 2 adult weight management services include: self-monitoring, goal setting/review, problem solving, behavioural instruction, social support, feedback and addressing the social environment (Public Health England, 2017). Cognitive behavioural weight management interventions have also been developed to target cognitive processes in addition to behaivioural changes. Cognitive approaches include evaluating changes, restructuring cognitions around weight management capability and working flexibly rather than following rigid rules (Cooper & Fairburn, 2001).

More recently, third-wave approaches have been included in weight management interventions including acceptance and commitment therapy (ACT), mindfulness and compassion-focused therapy (CFT). ACT-based weight interventions focus on the relationship between weight-related choices and values-based living whereas behavioural approaches tend to focus on weight loss/gain-prevention (Lillis & Kendra, 2014). ACT-based interventions aim to reduce experiential avoidance and increase psychological flexibility. Techniques include values, acceptance and mindfulness skills (Lillis & Kendra, 2014). Mindfulness aims to increase metacognitive awareness and raise awareness of automatic processes, such as eating on auto-pilot, which can improve self-regulation (Daubenmier et al., 2016). CFT targets shame, self-directed hostility and self-criticism, and has shown effectiveness in an eating disordered population (Goss & Allan, 2014). Third-wave approaches tackle difficulties including shame and self-criticism through self-compassion and decreasing emotional avoidance (Palmeira, Pinto-Gouveia, & Cunha, 2017). Evidence for effectiveness has been explored in a randomised controlled trial of an ACT, mindfulness and CFT based 10-week group intervention (N = 73) called ‘Kg-Free’, which was compared with treatment as usual (TAU) medical and nutritional advice (Palmeira et al., 2017). The intervention group saw statistically significant improvement across all variables including quality of life, healthy behaviours, reducing negative experiences and improving psychological functioning (medium to large effects). BMI reduced more in the intervention group than TAU with a small effect (d = 0.09). An ACT-based NHS Tier 3 intervention (N = 166) called ‘Weigh Forward’ has been evaluated (Moffat et al., 2019). This was a six month programme with a 1-year foliow-up and the results showed that completers (*n* = 88) had a mean weight loss of 5.6kg at the 6-month follow-up with 35.2% (*n* = 31) of participants losing at least 5% of their body weight. Statistically significant results were also found in psychological variables including reduced depression, anxiety,

binge eating and improvements in emotional regulation. Despite these encouraging results, there remains limited published research into third-wave approaches for weight management.

Local service context

The paper describes the evaluation of a psychology-led Tier 2 weight management intervention called ‘Balance’ a course underpinned by CBT, ACT, mindfulness and CFT. Balance was delivered by a primary care mental health service called Positive Step. At the time of development, local weight management services included a small Tier 3-4 service provided by the city hospital and a Tier 2 service provided by a commercial weight management provider (with places funded by the local council). Balance was a joint initiative between the service and local public health commissioners designed to offer an alternative Tier 2 weight management service. This paper provides an outline of the course content, evaluation methods and results.

Course design and content

The course was designed to follow the service’s ‘Get Ready for Change' (GRFC) course, which prepares clients for weight loss through change-based models and strategies. Balance content was designed by a Clinical Health Psychologist, a Psychological Wellbeing Practitioner and a Dietitian (AS, SC and HW) and the twelve weekly sessions included dietetic, psychological and behavioural elements. The course ran over three calendar months with one follow-up session three months after the group ended. Follow-up data were also collected six months after the group ended. The course content was designed with reference to the evidence-base including the emerging evidence about third-wave approaches. Table 1 shows the weekly course content and underpinning theory.

Insert Table 1 here

Service evaluation project aims

The weight management intervention was designed and delivered by the local NHS service and the the evaluation project was completed by a Trainee Clinical Psychologist (first author) as part of a

Doctorate in Clinical Psychology at the University of X. The project aimed to evaluate effectiveness and to make improvement recommendations for subsequent groups. The project explored two questions:

1. What impact did Balance have on the outcome measures of: weight change, weight-related self-efficacy, dietary choices and mental health?

2. What suggestions do group attendees have for improving Balance?

Materials and Method

Participants

Eleven clients started Balance (nine women, two men) and one client dropped out at Week 6. An average of nine sessions were attended per client with a range of 6 – 12 sessions (m = 9.1, SD = 1.97). BMI ranged from 26.7 kg/m2 to 39.6 kg/m2 (m = 33.19) (n = 10), and ages ranged from 37 to 82 (m = 55.8) (n = 10). Ethnicity was White British for all participants. Educational level data was not collected. Inclusion criteria for attending Balance were BMI between 25-40 kg/m2, not attending another weight management programme, not meeting criteria for an eating disorder and completion of GRFC.

Ethical approval

The project was registered with the relevant NHS Mental Health Trust as a service evaluation project and received ethical approval from The University (NAME REDACTED) Psychology Ethics Committee. An information sheet was given to group attendees and informed consent was obtained for participating in this project. No incentives were offered for participation in the focus group.

Study design and procedure

This service evaluation study used a two-phased sequential explanatory mixed methods design (Creswell & Clark, 2017) where outcome measure data was collected during the course followed by a focus group.

Quantitative methods: A within-subjects, repeated measures design was used. Group attendees were invited to complete weekly outcome measures during the course and at two follow-up points (three months and six months) which were analysed using Wilcoxon signed-rank tests.

Qualitative methods: All Balance attendees were invited to a focus group (including those who did not complete the course). A semi-structured interview protocol was developed in collaboration with the service which was informed by previous research (Hindle & Carpenter, 2011; Metzgar, Preston, Miller, & Nickols-Richardson, 2015) and the first author's review of the course material.

Analysis

Quantitative analysis. Wilcoxon signed-rank tests were used as the data did not meet assumptions for parametric tests. The author analysed the data using Excel and SPSS (Versions 23 and 24).
Qualitative analysis. The focus group was audio-recorded and the author analysed the data using thematic analysis (Braun & Clark, 2006). An independent analyst (MH) rated the coding to assess inter-coder reliability (Campbell, 2013). There was 80% agreement and discrepancies were resolved through discussion. The analysis was completed from a realist standpoint as the aim of the research was to improve services rather than to explore the meaning of experiences or the broader social context. The thematic analysis focused on the service improvement aspects of the data rather than producing a description of the entire data set as the conversation broadened out to discuss areas that were not under the direct influence of the service, such as social and environmental factors. A semantic approach was taken to identifying the themes, meaning that the themes were identified by considering the explicit meaning without deeper interpretation (Braun & Clarke, 2006).

NICE guidelines gap analysis: A gap analysis was conducted between the NICE guidelines "Weight management: lifestyle services for overweight or obese adults" (NICE, 2014) and the Balance course content. The analysis compared the Balance course material to the suggested components of successful weight management interventions according to those guidelines. The results (Table 2) were used to inform the project recommendations.

Instruments / Tools

Measures were selected based on service and commissioner requirements, clinical experience and

literature review. Physical changes were recorded using weight and waist circumference measurements. Mental health data were captured using the Patient Health Questionnaire (PHQ-9) and Generalised Anxiety Disorder questionnaire (GAD-7) which are measures of depression and anxiety (respectively) used routinely in IAPT services. PHQ-9 is a validated, 9-item measure of depressive symptoms (Kroenke, Spitzer, & Williams, 2001). It measures depressive symptoms over the past two weeks. Nine items are rated on a 0 to 3 scale. A total score of 10 or more indicates clinically significant depressive symptoms. The scale has excellent internal consistency (α = 0.89) and excellent test-retest reliability (r = 0.84). The clinical cut-off is a score of 10 or above. GAD-7 is a validated, 7-item questionnaire that measures symptoms of anxiety over the past two weeks (Spitzer, Kroenke, Williams, & Lowe, 2006). Items are rated on a 0-3 scale. The scale has excellent internal consistency (α = 0.92) and good test-retest reliability (r = 0.83). The clinical cut-off is a score of 8 or above.

The Weight Efficacy Lifestyle questionnaire (WEL) was selected to measure changes in weight-related self-efficacy. This is a validated, 20-item questionnaire that measures the ability to resist or control eating in relation to five factors: Negative Emotions, Availability, Social Pressure, Physical Discomfort, and Positive Activities (Clark, Abrams, Niaura, Eaton, & Rossi, 1991). Participants choose from a 10-point scale (0-9) with higher scores indicating greater confidence in being able to resist eating in those situations. The questionnaire gives subscale scores and overall self-efficacy scores. The scale is reported to have acceptable internal consistency and a stable 5-factor structure (Clark et al., 1991).

The UK Diabetes and Diet questionnaire (UKDDQ) is a twenty-five item questionnaire that assesses diet. The scale has excellent test–retest reliability for the total score and for almost all the individual items (England, Thompson, Jago, Cooper, & Andrews, 2017). The UKDDQ been validated with a White British population in clinical and non-clinical settings. Question responses are scored with a letter: As and Bs = Healthy dietary choices; Cs and Ds = Less healthy dietary choices Es and Fs = Unhealthy dietary choices. Three questions relate to the importance of making dietary changes and assess confidence in achieving the change.

Two measures were chosen to collect patient feedback: the Patient Experience Questionnaire (PEQ) and a bespoke end of course feedback questionnaire (FQ). The PEQ is routinely in IAPT services and collects quantitative ratings on 5 aspects of the service experience, with the option to provide additional qualitative feedback. The FQ collected quantitative and qualitative data about the patient experience and asked patients to rate the course and course leaders on a 5-point Likert scale from Excellent to Very Poor, whether they would recommend the course to a friend (Yes/No) and space to provide qualitative feedback on the most helpful sessions.

Frequency of collection is stated in Table 2:

Insert Table 2 here

Results

Nine participants provided complete course data (pre and post course). Data at the 3-month follow-up was collected from five participants, and at the 6-month follow-up the same nine participants also provided their data (self-report *n* = 4; in-person weighing *n* = 5).

Question 1 – Outcome measures.

Weight change results

At the end of Balance (*n* = 9) six clients had lost weight (range: 0.5% - 8.1%); two saw no change and one client gained weight (representing a 1% increase in body weight since the course started). A Wilcoxon signed-rank test (on pre and post Balance weight data (*n* = 10)) based on positive ranks indicated that the group's mean weight decrease from pre-course to post-course was statistically significant (*Z* = -2.173, *p* = 0.030).

At the 3-month follow-up (*n* = 5) four clients had lost weight (range: 1% – 11.4%) and one client gained weight (representing a 7% increase in body weight since the course started). Analysis was conducted on pre-course and 3-month follow up weight data, only using data from participants who provided data at this follow-up (*n* = 5). A Wilcoxon signed-rank test based on positive ranks indicated that the group's mean weight decrease from pre-course to 3-month follow-up was not statistically significant (*Z* = -.944, *p* = 0.345).

At the 6-month follow-up (*n* = 9), seven clients had lost weight (range: 0.5% - 13.8%). One client had lost more than 10% of their starting weight, two clients had lost 5-10% and four clients had lost under 5% of their body weight. Two clients had gained 2-3% of their body weight. Analysis was conducted using data from those who provided data at both time points. A Wilcoxon signed-rank test based on positive ranks indicated that the group's mean weight decrease from pre-course to 6-month follow-up was not statistically significant (*Z* = -1.718, *p* = .086).

Analysis was also conducted using pre-Balance and 6-month follow up weight data (excluding self-reported weights (*n* = 5)). A Wilcoxon signed-rank test based on positive ranks indicated that the

group's mean weight decrease from pre-course to 6-month follow up for this group was not statistically significant (Z = -.135, p = .893).

Mental health results

One client recorded a pre-group PHQ-9 score above clinical cut-off, that reduced from 11 (pre-course) to 4 (post-course). PHQ-9 data analysis shows that six clients had a lower depression score after the course, two clients had a higher depression score after the course and one client's score remained the same. GAD-7 data analysis shows that three clients had a lower anxiety score after the course, three clients had a higher anxiety score after the course and the level had not changed for three clients. Wilcoxon signed-rank tests indicated that there was not a statistically significant decrease in group mean depression or anxiety scores from pre-course to post-course (Depression: Z = -0.985, p = 0.325; Anxiety: Z = -0.108, p = 0.914).

Weight related self-efficacy results

Of those who provided data at 6-month follow-up (n = 5), WEL mean total score increased after Balance suggesting an increased self-rated ability to resist eating in certain situations. However scores decreased by 6-month follow-up suggesting a loss of confidence over time (pre: 81.6; post: 122.6; 6-months: 106.8).

Dietary choices results

The UKDDQ was used to assess change in dietary choices pre and post-course (n = 9). At the end of Balance, participants made fewer 'less healthy' (C's and D's) and 'unhealthy' food choices (E's and F's) and made more 'healthy' food choices (A's and B's). At 6-month follow-up (n = 5) participants self-rated as making fewer healthy choices suggesting that some of the gains were lost over time.

Of those who provided data at 6-month follow-up (n = 5), group mean confidence about making dietary chances had increased by the end of Balance, however, this had decreased at the 6-month follow-up to lower than pre-course levels (pre: 6.2; post: 7.6; 6-months: 5.8). Similar to the WEL results, this suggests that the course impact may fade over time and that additional support may be

beneficial – particularly as results showed that the self-rated importance of making changes had increased at follow-up (pre: 9; post: 8.4; 6-months: 9.4).

Question 2 - Focus group results

Six clients participated in the focus group (four females, two males). Data analysis showed seven themes.

Theme 1: Gaining new knowledge and skills. Participants gained a new understanding of weight management through learning evidence-based information (including physiology, psychology, and nutrition) and new tools and techniques. Participants valued learning from the evidence-based course material, including nutrition science, dieting and psychological understanding of weight management.

> "I personally found it very helpful to go deeper, not just about the food, but you know, what's behind the scenes so to speak, in each one of us, you know, the psychology of it, the understanding of it …" (P4)

> "I learned quite a lot about the scientific things happening in your body as well, so like the hormones that are involved with, and affect your eating." (P6)

Participants also valued learning new tools including the Eatwell plate, and techniques such as distraction and mindfulness. These were used during and after the course. Participants appreciated learning via visual and kinesthetic methods.

> "It was the mindfulness ... When they gave us that piece of chocolate … Making you actually look at it." (P2)

> "They opened my mind to distraction techniques. I'd not considered what that even was." (P3)

Theme 2: Valuing the course ethos. Participants valued Balance's philosophy, approach and long-

term focus. The first sub-theme captured comments that Balance is about freedom to choose, hopefulness and positivity whereas other weight management programmes are about denial, restriction, hopelessness and failure.

> "I suppose where as you do a diet you're more restricted. With this, I like that I don't feel that restriction, because that knowledge has actually given me a freedom and better choices. I don't have to do what's written down in the dos and don'ts." (P4)

> "There's none of this sense of failure or hopelessness of, I just can't do this! I just cannot face doing this! You know, trudging on, which is what I've felt in diet groups." (P4)

The second sub-theme captures comments about the emphasis on change over the longer term.

> "So there's a lot of difference. This is a totally different course to those courses that are out there that all really want you to go back and spend some more money when you put some weight on." (P2)

> "Well there was a couple of people every so often would say, *"well I'm not doing very well on my diet*"… and every time someone said that, they would respond with, "you're not on a diet" (P6)

Theme 3: Readiness for change. Some participants talked about their readiness for change and two out of six participants said that they were not ready to change when starting Balance, with one participant noting that they had moved back to the contemplation stage during the course. Narratives emphasised that even if the participant was not making changes at present, the course had given them knowledge and skills for the future.

> "I knew when I was doing this course … I knew that I wasn't in the right frame of mind to be thinking about losing weight or any of those sorts of things, but what I used Balance for was a preparation" (P3)

> “I didn’t do the course to lose weight primarily. I did the course to prepare myself with the knowledge that the course has given us, to do something different. (P4)

Theme 4: Importance of group support. Participants valued the group support, both during and after the course including sharing ideas, learning from others and being inspired by other group members. This was achieved via the course sessions and through a social media group.

> “We were able to discuss these sort of solutions as well, amongst us … They come up with like problems, but actually we came up, with answers to those problems. And we all came up with different answers because we’ve got different ways of life and stuff.“ (P6)

> “That’s how I felt I benefitted, by listening to everybody and how they were dealing with each situation which was known to me, I thought “oh yes, I know what they’re talking about” and I thought “oh that’s how they deal with it.”” (P1)

Most participants expressed a desire for support after the course, including continued contact with group members. There was also a desire for additional service provision, such as a regular meet-up group.

> “I want to know what happens to everybody!! (P5)
> “Meeting up reminds you, if you can re-discuss and re-visit these things. That for me would just again, be another step to really improve everything.” (P6)

Theme 5: Making changes. Most participants discussed the changes they had made during and after the group, which can be grouped into cognitive and behavioural changes. The cognitive changes participants reported included: noticing and challenging rules (particularly those developed in childhood); developing a new ‘mindset’ - including increased self-efficacy about weight management (change is possible and achievable); reduced ‘all or nothing’ thinking; regaining control; and increased confidence with handling relapses.

> “It completely changed that way I looked at things and it put me in that right state of mind to be able to move forward and to use everything that we were sent.” (P4)

> “I’ve got the mind-set to adjust.” (P4)

This theme also includes participant reports of personal reflection on course material and discussions that lead to changes in eating-related cognitions or exercise behaviours.

> “It’s also changed our mind on things like … a lot of us were told when we were younger that we had to clear our plate. “ (P2)

Behavioural changes included eating (making wiser choices, changing meal patterns) and exercise (getting active, changing activity types).

> “But the other thing it did … was to look at exercise completely differently. I always think if you’re gonna do exercise you’ve gotta go to the gym, or you’ve gotta play some kind of sport … but …it’s not just about exercise but it’s about just keeping moving.” (P5)

Theme 6: Benefits beyond weight loss. Participants described additional and unexpected benefits from attending the course including improved mental health.

> “I think it makes you feel better. It makes a better sense of wellbeing.” (P2)

> “It’s changed my life ... It has. It’s completely changed my life … I quit my job and everything!... It’s changed my life. It’s changed my whole attitude” (P6)

Some participants also discussed developing and re-discovering hobbies, and others talked about a renewed interest in cooking.

> "It's brought back something I like doing … actually going and buying fresh vegetables … and creating a meal…. I'm loving that again!" (P4)

Theme 7: Conviction that the course needs to be shared with others. Some participants talked about the importance of sharing information from the course with others.

> "I've been going through some of this with my daughter…" (P4)

> "I've talked quite a lot about this with my little boy …" (P6)

Most participants emphasised that Balance should be shared more widely through extended service provision, particularly for younger people.

> "You need to do it younger. We need to do it from school upwards as well as out to the public. We need this to go into schools." (P2)

> "It would be so, so sad not to have all of this. You know, just filed away in a drawer somewhere not to be continued. There's too much here not to share." (P4)

Patient feedback results

Qualitative feedback from the PEQ was positive and is shown in Table 2. The FQ showed that all attendees rated the group as Excellent or Very Good, all rated the course leaders as Excellent or Very Good, and all would recommend the course to a friend (*n* = 11). The sessions most frequently mentioned as being helpful were: Session 2 - Myths and the Eatwell Plate; Session 3 - Dieting Cycle, and Session 5 - Mindfulness.

NICE guidelines gap analysis results

The Balance course content was compared with the NICE guidelines PH53 (2014). Results showed that greater alignment could be achieved by: involving a physical activity instructor in course

design/delivery; agreeing achievable weight loss goals with each client and increasing the level of self-monitoring (Table 4).

Discussion

This project aimed to determine whether the Balance pilot was an effective intervention and to make improvement recommendations based on the outcome measure data and focus group results. At the end of Balance, group mean weight loss was statistically significant (p = 0.030), but this was not maintained at the 3-month (p = 0.345) or 6-month (p = .086) follow-ups. However, seven out of nine clients had lost weight at the 6-month follow up.

Results showed improvements in weight-related self-efficacy and dietary choice. One person had a depression score above clinical cut-off (measured on the PHQ-9) before starting Balance, this reduced to below clinical cut-off by the end of Balance. These results, together with the qualitative feedback about positive psychological changes suggest that third-wave informed approaches may be helpful for weight management. As participants reported that they were preparing for long-term change, this suggests that longer follow-up periods may be important.

Weekly weighing was optional and no participants discussed self-monitoring which has been shown to be effective for weight loss (NICE, 2014). However, given that participants valued learning about the evidence-base, clients may also welcome hearing the evidence for self-monitoring to inform their decision. This could have a positive impact on weight loss outcomes as a systematic review of self-monitoring using longitudinal studies found that regular self-weighing is associated with weight loss (Zheng et al., 2015).

All clients completed a readiness to change assessment prior to starting Balance, however during the focus group, two out of six participants said they had not been ready to change. It is possible that clients may have been unsure whether the opportunity to participate would re-occur if they did not access the pilot or whether motivation changed over time. Ongoing monitoring of motivation to change is indicated.

Finally, focus group participants valued the experiential exercises. Research shows that imagery manipulation exercises may support change in eating behaviours - for example, by reducing snacking

(Andrade, Khalil, Dickson, May, & Kavanagh, 2016). Including practical exercises in Balance was acceptable to clients and appeared to support behaviour change.

Recommendations

Based on the results, seven recommendations were discussed with the service to develop Balance after the pilot (Table 5).

Insert Table 5 here

These included readiness to change, mandating weight monitoring and outcome measurement.

Readiness to change. The service was interested in the results relating to alterations in readiness to change that had occured during Balance and would consider whether to monitor this more frequently, potentially with using an alternative measure such as the self-report S-Weight (Andres, Saldana, & Gomez-Benito, 2009) and P-Weight (Andres, Saldana, & Gomez-Benito, 2011).

Weight monitoring. The service raised concerns about the NICE recommendation for regular weight monitoring, stating that this may lead people to take short cuts to reduce their weight in time for weigh-day at the expense of longer-term success. The service noted that weight management courses with a behavioural focus are often successful in the short term but often weight is regained over the longer term, hence the need for a different approach.

Outcome measurement. The service recognised that the measures did not capture the change in wellbeing reported by the participants, and would consider the validated Impact of Weight on Quality of Life (IWQOL) measure (Kolotkin & Crosby, 2002), which may capture some of the additional changes that the participants discussed during the focus group.

Feedback to Commissioners

Before these recommendations were implemented, the commissioners decided not to re-commission Balance due to funding constraints and insufficient evidence for its success based on weight-related outcomes at the end of Balance and 3-month follow-up data. Although service user feedback from end-of-course questionnaires were available to the commissioners, the focus group was yet to be

completed. The focus group results later showed that participants found Balance extremely valuable even if weight loss had not yet been achieved as the course prepared them for change. Weight loss was the primary outcome of importance to the commissioners, but the focus group results show that this was not the most important factor for the service users. This suggests that it may be important to include the service user voice to a greater extent in weight-management commissioning decisions and service design, particularly as these results suggest that weight loss is not the only or most valued benefit that the participants gained from Balance. It is also important that services capture these less tangible benefits where possible.

Limitations

All participants were White British which limits conclusions that can be drawn about course acceptibility and effectiveness with people from other ethnicities. Only one client attended all 12 Balance sessions and it is possible that missed sessions impacted effectiveness. The pilot had a small *n* and so results must be interpreted with caution. A further methodological limitation is that some of the weight change data collected at the 6-month follow-up was self-reported (n = 4) which is known to lead to under-reporting of weight (Connor Gorber, Tremblay, Moher, & Gorber, 2007). Finally, the focus group participants were aware that Balance was a pilot with a risk that the group would not be continued. As the group wanted the pilot to be extended, the feedback may have been positively skewed.

Future research

The course content was underpinned by a range of therapeutic modalities and related techniques. Further research is needed to determine the efficacy of interventions in relation to their theoretical underpinning. This is particularly important for programmes with a limited evidence-base such as those underpinned by third-wave approaches. It would also be useful to conduct studies with a larger sample, particularly to enable sub-group analysis to be undertaken, for example, to determine whether the intervention is differentially effective depending on starting weight or BMI.

Conclusion

This project assessed Balance's effectiveness and offered improvement recommendations. Analysis using non-parametric statistics showed that at the end of Balance there was a statistically significant decrease in group mean weight but this was not maintained at the 3-month or 6-month follow-ups. In terms of mental health, non-parametric tests did not show a statistically significant decrease in PHQ-9 scores for depression ($p = 0.325$) nor in generalised anxiety scores measured using the GAD-7 ($p = 0.914$). Improved weight loss outcomes might be seen by aligning the course with the evidence of self-monitoring. However, results showed that the attendees valued the course emphasis on choice and this suggests it would be important to maintain this ethos. These results provide further evidence for the efficacy and acceptability of Tier 2 group weight management programmes underpinned by third-wave approaches. The results may be of interest to those wishing to set-up or evaluate weight management services.

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Table 1

Course content

Session number	**Session content**	**Underpinning theory / model**
Session 1	Introduction to course and readiness for change	CBT; CFT; ACT; Stages of Change model (Prochaska & DiClemente, 1983).
Session 2	Motivation and commitment Identifying your values Dieting myths; the eatwell plate; current lifestyle audit	The 'Do Something Principle' (Manson, 2015) ACT CBT
Session 3	Physical and psychological aspects of the dieting cycle	
Session 4	Why we gain weight; portion control; benefits of physical activity; overcoming barriers to physical activity	Problem solving/CBT
Session 5	Mindful eating (including experiential exercise)	Mindfulness

	Physical and emotional hunger	
Session 6	Emotional eating, cravings and snacking - Identifying and managing emotional eating - Healthy snacking ideas	CBT; ACT; Mindfulness
Session 7	Progress review - Quiz and group discussion	
Session 8	Physical health and weight gain - Biological factors Living a valued and meaningful life Assertiveness skills	CBT; ACT.
Session 9	Secret eating and meal preparation - Understanding and managing secret and emotional eating - Problem solving barriers to healthier eating	CBT; Mindfulness

Session 10	Handling social eating - Social contagion; importance of kindness and self-compassion; Stress management; planning ahead for social situations.	CBT; CFT
Session 11	Thoughts and healthy living - Noticing thoughts; rules for living; behavioural experiments; thought defusion	CBT; ACT

Table 2

Summary of measures

Measure	Collection Frequency
Patient Health Questionnaire, PHQ-9.	Weekly during the course
Generalised Anxiety Disorder questionnaire, GAD-7.	
Weight Efficacy Lifestyle questionnaire (WEL)	At start and end of course, and at 6-month follow-up

UK Diabetes and Diet questionnaire (UKDDQ)	At start and end of course, and at 6-month follow-up
Weight and waist circumference measurements	At start and end of course, 3-month & 6-month follow up.
The Patient Experience Questionnaire (PEQ)	Once, at end of course
Balance end of course feedback questionnaire.	Once, at end of course

Table 3

Qualitative feedback received on Patient Experience Questionnaire

“This is an excellent service and I would like to see it rolled out so that others can benefit from it. It would be good to continue even if it was only every 2 months!”
“Everyone was really helpful, listened, lots of really good tips and ideas.”
“This course has been brilliant, as have the tutors. It really has made a positive impact on my life. I hope this course becomes available to everyone.”
“A very positive and informative service giving us skills to cope/manage and 'face' difficulties with eating. Thank you.”
“Really informative, changes the way I think, very helpful.”
“Excellent service, thank you, acting on it sensibly is quite often still a challenge.”
“A very interesting experience.”

Table 4

Balance course content and NICE Guidelines gap analysis

Gap Analysis: Balance course content comparison with NICE guidelines PH53 Weight management: lifestyle services for overweight or obese adults (2014)

NICE Guidelines: Weight management: lifestyle services for overweight or obese adults (2014)	**Was this guideline met in Balance?**
Programme elements are multi-component that is, they address dietary intake, physical activity levels and behaviour change.	Yes.
Are developed by a multidisciplinary team. This includes input from a registered dietitian, registered practitioner psychologist and a qualified physical activity instructor.	Partially met. Dietician and psychologist were involved. A physical activity instructor did not provide input.
Ensure staff are trained to deliver them and they receive regular professional development sessions.	Yes.
Focus on life-long lifestyle change and the prevention of future weight gain.	Yes.
Last at least 3 months, and that sessions are offered at least weekly or fortnightly and include a 'weigh-in' at each session.	Yes.

Ensure achievable goals for weight loss are agreed for different stages – including within the first few weeks, for the end of the programme or referral period (as appropriate) and for 1 year (see improve adherence and outcomes in this pathway).	Partially met. Goal setting and reviewing was optional.
Ensure specific dietary targets are agreed (for example, for a clear energy [calorie] intake or for a specific reduction in energy intake) tailored to individual needs and goals. Note: it is preferable not to 'ban' specific foods or food groups – and the price of any recommended dietary approaches should not be prohibitive. Individual advice from a registered dietitian may be beneficial, but is not essential.	Partially met. Individual specific dietary targets were not set. Dietician was present at all sessions.
Ensure discussions take place about how to reduce sedentary behaviour and the type of physical activities that can easily be integrated into everyday life and maintained in the long term (for example, walking).	Yes.
Ensure any supervised physical activity sessions are led by an appropriately qualified physical activity instructor and take into account any medical conditions people may have. Instructors should be on the Register of Exercise Professionals (or equivalent) at level 3 or above.	Not met. A physical activity programme was not included.
Use a variety of behaviour-change methods. These should address: problem solving; goal setting; how to carry out a particular task or activity; planning to	Partially met. Most of these elements were included. With regards to self-monitoring of weight and behaviours, participants were encouraged to keep

provide social support or make changes to the social environment; self-monitoring of weight and behaviours that can affect weight; and feedback on performance.	food and mood diaries but it was not compulsory. No one in the focus group mentioned formal energy intake tracking. In terms of individual feedback, participants who chose to be weighed were informed of their weight.
Tailor programmes to support the needs of different groups. For example, programmes should provide men- or women-only sessions as necessary; provide sessions at a range of times and in venues with good transport links or used by a particular community; and consider providing childcare for attendees.	Not applicable, as Balance was a pilot.
Monitor weight, indicators of behaviour change and participants' personal goals throughout the programme.	Partially met. Weight was monitored at 3 time points (minimum). Personal goals were optional and monitored individually. Sharing goal progress was optional, not formalised. Other indicators of behaviour change (e.g. activity levels, energy intake) were not monitored.
Adopt a respectful, non-judgmental approach.	Yes. Focus group participants praised the course philosophy, and the feedback questionnaires noted that the course leaders were supportive.

Table 5

Recommendations

Recommendation	Rationale
Review participants' readiness for change during the course.	To assess whether participants have moved from Action back to Contemplation. If motivation has changed, determine whether the course can provide additional support to move the client back to the Action stage.
Review course guidance on self-monitoring of weight and energy consumption. Include goal setting and self-monitoring in a way that fits with the course philosophy. Consider whether self-monitoring should be part of the contractual obligation from the outset. Provide information about a range of self-monitoring tools, such as apps.	Greater alignment with NICE guidelines.
Adapt course content to include content on context: life stages, transitions and physical and mental health.	Focus group participants talked about the challenge posted by their personal circumstances, including pain and mental health problems.
Use mental imagery exercises in Balance. Monitor the evidence-base on mental imagery, and consider increasing the number of experiential exercises by introducing imagery techniques.	To introduce additional experiential exercises that might support weight loss, as focus group participants valued experiential exercises.

Review outcome measures.	Change may take place over a longer period, so a longer follow-up period may be indicated. Participants did not think that weight measurement outcomes reflected the most important change that they experienced during the course e.g. quality of life, wellbeing, activity levels.
Offer a follow-up group.	Focus group participants stated that they would welcome additional support after the course completion. Follow-up results relating to dietary choices and weight-related self-efficacy suggested that gains faded over time.
Increase the number of Balance courses offered.	Focus group participants strongly suggested that more people should be able to access the course, particularly young people.